

tially maximum duty cycle ... [and] ... the at least one first heating element (20) [is energized] at less than maximum duty cycle.”

In an effort to cure that deficiency, the Examiner now contends that Payne et al. would have made it “obvious ... to adapt Schilling with varying power duty cycle outputs to each of the heating elements so that each element can achieve the desired power output selectively set by the user including the application of full maximum power to one heating element while applying less than maximum power ... to other heating elements.” This contention is without foundation in fact or reason, is without legal justification, and is devoid of merit.

*The Combination of References is Improper*

As the Examiner is certainly aware, it is axiomatic that references cannot be combined, in support an obviousness rejection, when the prior art provides no proper suggestion or motivation for doing so. “There are three possible sources for a motivation to combine references: the nature of the problem to be solved, the teachings of the prior art, and the knowledge of persons of ordinary skill in the art.” (MPEP 2143.01)

The Examiner does not contend here that the nature of the problem to be solved provides the required suggestion or motivation -- and clearly it does not. Like the present invention, Schilling et al. is directed to the problem of achieving a uniform temperature distribution over a discrete surface area of a cooktop that is commonly heated by two or more coacting and cooperating electric elements. Payne et al., on the other hand, is directed to a completely different problem; i.e., the essential objective of the invention is to avoid the frequent excessive current surges that are attributable essentially to the particular resistive heating

elements employed (see the very title of the patent, which refers to “high inrush current elements,” and for example the disclosure at lines 9-15 in column 3).

The Examiner also does not contend that the required suggestion or motivation for modifying Schilling et al. with Payne et al. can be found in any prior art reference. And obviously, it cannot be.

Rather, and to the extent that he deals with the issue at all, the Examiner seems to find justification, for combining the applied references, in knowledge generally available to one of ordinary skill in the art. Not only is there no basis for such a conclusion, however, but indeed it is contrary to both fact and law.

Firstly, it is obvious that Schilling et al. simply *would not want to* adapt their heating unit “with varying power duty cycle outputs ... so that each element can achieve the desired output selectively set by the user.” Unlike the four single-element, independent heating zones (designated by the radial patterns 11) provided in the Payne et al. cooking range (discussed more fully below), the Schilling et al. heating unit employs a plurality of heating elements “which pass into one another and/or are located within a common circumferential boundary” and which function together to cooperatively heat a discrete surface area of a cooking plate (see, for example, column 1, lines 46-50 of the patent). Selective setting by the user of power outputs for each of the “two or more adjacent” heating elements would be neither desirable nor feasible for achieving the balance and the uniform temperature distribution that is the essential objective of the Schilling et al. invention.

Moreover, reconstructing Schilling et al. to incorporate Payne et al., as asserted by the Examiner, would preclude operation of the Schilling et al. unit in the manner expressly re-

quired, and would thereby render the unit unsatisfactory for its intended purpose. Such a combination is simply impermissible as a matter of law.

*The References Teach against  
Essential Limitations of Applicant's Claims*

As discussed extensively in Applicant's "Statement Accompanying RCE," and summarized on page 3 thereof, "according to Schilling et al. either both heaters operate at full power -- or neither does." Thus, Schilling et al. teaches *against* an essential feature of Applicant's claim; i.e., at full power one of the heating elements must operate at maximum power while the other operates at less than maximum power.

In accordance with an essential feature of the Payne et al. invention, on the other hand (and ignoring for the time being that the disclosure of the patent is essentially irrelevant to the claimed invention), "staggering of the control logic processing ... [is necessary, so as to cause] ... each heating element to be out of phase with every other heating element by at least one power cycle." (column 4, lines 22-40; see also column 8, lines 21-29). The Examiner has not explained how these disclosures are compatible with the stated requirements of Applicant's claims or with the Schilling et al. disclosure, and they appear not to be.

In Figure 3, referred to by the Examiner, Payne et al. show that a heating element is energized at different duty cycles depending on the power setting of a power control system 4. In particular, Figure 3 shows that at Power Setting 7 the relevant heater is operating at maximum duty cycle, while at lower power settings the *same* relevant heater is operating at less than maximum duty cycle.

There is nothing in Figure 3 that would lead a person skilled in the art to adapt an assembly, comprised of a first heating zone and a second heating zone at least partially sur-

rounding the first heating zone, as claimed, so as to operate the two heating zones in a specific manner such that, when the two heating zones are operating in combination at full power, the heating element in the second heating zone is operating at less than maximum duty cycle while the heating element in the first heating zone is operating at less than maximum duty cycle.

Payne et al. do describe a system for current balancing (by operating the single elements of the four independent heating zones out of phase with one another) in relation to Figure 4 and to the disclosure in the passage at line 51 in column 9 to line 45 in column 10. However, there is no suggestion that any of the heating elements should be operated at different duty cycles relative to each other when the heating elements are energized simultaneously at full power.

Payne et al. also describe a “soft start” system, which is illustrated in Figure 6 and described at column 6, lines 5-12. It will be noted that the heating elements, which should be operating at maximum duty cycle, have in fact been reduced in power to a level between Power Level 6 and Power Level 7 (the power levels being as shown in Figure 3). Consequently, *none* of the heating elements is operating at maximum duty cycle.

The Examiner asserts that, in view of the new ground(s) of rejection, the arguments previously made are moot. For the same basic reason why Schilling et al. could not anticipate any of the instant claims (as now conceded by the Examiner, in view of Applicant’s arguments), however, the present rejection for obviousness cannot stand. Applicant’s earlier arguments are hardly moot.

Irrespective of whatever else Payne et al. may disclose, the reference does not provide a teaching that is compatible with the requirement of Schilling et al. that “either both heaters

operate at full power or neither does.” Far from suggesting the desirability of modifying Schilling et al., adopting the teaching of Payne et al. would essentially change the principle of operation of the Schilling et al. heating unit and render it unsatisfactory for its intended purpose, thus belying the existence of a proper combination of references (MPEP 2143.01, sections V and VI). And once again, moreover, the references address entirely different problems.

Clearly, there is no proper suggestion or motivation for modifying Schilling et al. with Payne et al., as asserted by the Examiner. The fact that Payne et al. mechanisms *could*, if incorporated, *enable* different duty cycles to be applied to the heating elements of the Schilling et al. unit, certainly would not have made the modification obvious. The references do not provide a proper basis for rejecting any claim of the application.

*Even if Combined, the References Do Not Teach or Suggest the Claimed Invention*

As emphasized hereinabove, and as acknowledged by the Examiner, the broad claims of the application require, once again, that the first and second heating zones be operable together such that, in a selected full power operating condition, the second heating element is energized at substantially maximum duty cycle and the first heating element is energized at less than maximum duty cycle. There is absolutely no teaching or suggestion, *anywhere in the art*, of or for the desirability of providing, in an electric heater assembly of the character claimed, that capability for any purpose, much less for the purpose of providing temperature uniformity over a surface area that is commonly heated by at least two elements.

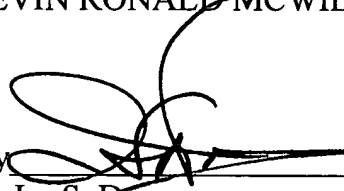
The fact that Payne et al. may teach the application of different duty cycles to separate heating elements, that have independently selected power settings and that are each used

alone to heat a *discrete* surface area of a cooktop, obviously does not teach or suggest the unique features of Applicant's claimed assembly. This point is perhaps most dramatically illustrated by Claim 2 of the application, which requires a predetermined ratio to be arranged between the duty cycles provided by the first and second energy controllers.

It is important to note that the Examiner distorts the significance of the Payne et al. disclosure by stating that "Payne shows an electric heater *assembly*." (emphasis added) As used in the present claims, an "assembly" must comprise at least two heating zones, arranged with one "at least partially surrounding" the other. Payne et al. provides no such assembly, and obviously cannot be deemed to teach anything pertinent to the control of the coacting and cooperating heating elements, so arranged, of which Schilling et al. (and the claimed assembly) is comprised.

It is clear that Applicant's electric heater assembly would not have been obvious to one of ordinary skill in the art at the time the present invention was made. The rejections are manifestly in error, and must be withdrawn. Such action is earnestly solicited.

Respectfully submitted,  
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CERTIFICATE OF MAILING

I, IRA S. DORMAN, hereby certify that this Response to Office Action is being deposited with the United States Postal Service, First Class mail, postage prepaid, in an envelope addressed as set forth on the first page hereof, on February 28, 2007.

A handwritten signature in black ink, appearing to be "Ira S. Dorman", written over a horizontal line.

cc: Derek C. Jackson, Esq.  
(Ref. No. P0697)